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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,892	02/04/2004	Tomas Brodsky	22369 (H27809)	5359

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EXAMINER	
STREGE, JOHN B	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/772,892	BRODSKY, TOMAS	
	Examiner	Art Unit	
	JOHN B. STREGE	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,12-17 and 22-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,12-17,22-25,28-30, 32-33, 36,-38, and 40* is/are rejected.

7)☒ Claim(s) *26,27,31,34,35 and 39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

The amendment received 12/09/07 has been entered in full.

Response to Arguments

Applicant's arguments filed 12/09/07 have been fully considered but they are not persuasive. Specifically the Applicant argues that Ng does not explicitly disclose wherein reflected light received from reflection areas that are illuminated by the narrower segments of higher intensity light is substantially diminished and the projected light from the headlights is received directly. The Examiner respectfully disagrees. As seen in figure 25, the headlight reflection peaks which are labeled are substantially diminished in intensity as compared with the headlight peaks which are received directly. This reads on the limitation addressed.

The Applicant further argues in relation to claim 22, that Ng does not teach distinguishing vehicles from reflections based on tracks of the illumination patterns in a series of images. Again the Examiner respectfully disagrees. While figure 25 is a snapshot of one of the tracks, it does not mean that only one track image is used. The input to the system of Ng is video which corresponds to a series of images. Further as seen in figures 2 and 3 a series of images are used to detect different tracks of different cars. Figure 25 is merely an example of one of the series of images that are analyzed by Ng.

Thus the rejection of the pending claims is maintained for the reasons given above.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6,12-17,22-25,28-30, 32-33, 36,-38, and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Ng et al. USPGPUB 2006/0274917 (hereinafter "Ng").

Ng discloses a traffic monitoring system (**paragraph [0002]**) comprising:

a video processor that is configured to receive an image from a camera having a field of view that includes a roadway (**paragraph [0094], see at least figure 1**), and

a pattern recognizer that is configured to identify headlight patterns in a recognition zone within the image, and to thereby distinguish vehicles within the

recognition zone (**paragraph [0125]**); wherein

the vehicles include headlights that are characterized as producing a broad segment of projected light and a narrower segment of higher intensity light (**it is inherent that headlights produce a broad segment of projected light and a narrower segment of higher intensity light, such a characteristic can be seen in figure 3)** ;

the recognition zone corresponds to a segment of a field of view of the camera wherein

reflected light received from reflection areas that are illuminated by the narrower segments of higher intensity light is substantially diminished and

the projected light from the headlights is received directly (**paragraphs [0121] and [0125] disclose that reflection light is diminished**); and

the headlight patterns correspond to the projected light from the headlights (**paragraph [0125]**).

Regarding claim 2, Ng discloses a zone extractor that is configured to extract a sub-image from the image corresponding to the recognition zone (**paragraph [0125] discloses that the vehicle is detected within a region of interest (ROI)**).

Regarding claim 3, Ng discloses a memory for storing prior images from the camera (**paragraphs [0095-0096]**), and wherein the pattern recognizer is further configured to track a path of each of the vehicles based on corresponding headlight patterns in the prior images (**paragraphs [0140-0143]**).

Regarding claim 4, Ng discloses the pattern recognizer is further configured to increment a count for each identified new headlight pattern, corresponding to a newly distinguished vehicle (**vehicle counter 2806 of figure 28**).

Regarding claim 5, **when the camera is within a path of the reflected light then the system of Ng diminishes this reflection area, when the camera is not within the path of the reflected light there is no reflection area to be seen by the**

camera so the system inherently includes the reflection area when the camera is not within the predominant path of the reflected light.

Regarding claim 6, Ng discloses a traffic analyzer that is configured to provide traffic analysis information based on information received from the pattern recognizer regarding distinguished vehicles (**paragraphs [140-143]**).

Claim 12 is similarly analyzed to claim 1.

Regarding claim 13, the headlight patterns must be newly occurring when the system of Ng commences.

Claim 14 is similarly analyzed to claim 5.

Claim 15 is similarly analyzed to claim 3.

Claim 16 is similarly analyzed to claim 4.

Regarding claim 17, multiple vehicles may be detected using the system of Ng as is evident by the counter, furthermore traffic analysis reports can be provided based on the detected vehicles (**paragraph [0150]**).

Regarding claim 22, Ng discloses a computer program for execution on a processing device that causes the processing device to: identify illumination patterns in a series of images from a video camera (**paragraphs [0125] and [0143], herein the tracks are read as the overall illumination that is put out by the headlights, and paragraph 0143 discloses that the process of detecting the headlights can be done in various frames**), and distinguish vehicles from reflections based on tracks of the illumination patterns in the series of images (**paragraph [0125], and figure 26**).

Regarding claim 23, the vehichles are distinguished from the reflections based on a length of each track (**as seen in figure 26, the headlights are distinguished from the reflection based on the length of the track from the axis of origin along the x direction)**.

Regarding claim 24, Ng discloses that the vehicles which are dark beyond the headlights and thus beyond the extent of the tracks of illumination are identified (**paragraphs [0140-0143]**).

Regarding claim 25, the limitations for this claim have already been discussed in the rejection of claims 1 and 22.

Regarding claim 28, as seen in figure 26 the tracking system includes a threshold detector that identifies the illumination patterns as patterns in each of the sequence of images that exceed a threshold luminance level.

Claim 29 is similarly analyzed to claim 25.

Regarding claim 30, the illumination pattern across various frames is used to detect the velocity of the vehicle (**paragraph [0143]**).

Claim 32 is similarly analyzed to claim 28.

Claim 33 is similarly analyzed to claim 1.

Claim 36 is similarly analyzed to claim 28.

Claim 37 is similarly analyzed to claim 1.

Regarding claim 38 as seen in figures 30-31 the illumination pattern is found in the current image and the prior image with the video camera.

Claim 40 is similarly analyzed to claim 28.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ng in view of Cucchiara et al. *Vehicle Detection under Day and Night Illumination* (hereinafter "Cucchiara").

Regarding claim 7, as discussed above Ng discloses identifying light patterns in the image. Ng does not explicitly disclose identifying combinations of light patterns within the image that are consistent with characteristics of vehicle headlights including a distance between the light patterns.

Cucchiara discloses a similar system for detecting headlights which focuses on finding headlight pairs and correlating them to a minimal rectangle including the headlight pair (section III. vehicle detection at night). This enable reliable detection of the vehicles.

Ng and Cucchiara are analogous art because they are from the same field of endeavor of detecting vehicles at night.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Ng and Cucchiara to look for pairs of headlights in the vehicle detection system since vehicles have two headlights and it is a reliable method of

detecting vehicles. Thus it would have been obvious to one of ordinary skill in the art to combine Ng and Cucchiara to obtain the invention of claim 7.

Allowable Subject Matter

5. Claims 26-27, 31, 34-35, and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN B. STREGE whose telephone number is (571)272-7457. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/
Supervisory Patent Examiner, Art Unit 2624

/JS/